

January 21, 1957

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Dear Jim:

I am sending herewith some very preliminary plans for the Giannini space. I am not entirely happy with them, but they may do for estimation purposes. They are probably overdrawn, having been drawn up with the local atmosphere of pressure for space; some trafficways probably have to be widened at the expense of room space. There is obviously more working room here than the minimum needs for 10-12 people. We have those minimum needs here now; what I hope to have the additional room for is to diversify, for more equipment kinds than we now have, but not for a larger program in terms of personnel. But one thing I would look forward to is some reserve space, like D say, to accomodate 'transients', people from other departments who might want to collaborate casually on short-term projects, and even undergraduates who want to do some 'special Projects'. It is the room for that kind of flexibility that I very much miss now.

This is the only clean copy, aside from sketches, that I have. To save time, I did not have it copied here— if you can conveniently arrange to have some photoprints made, they would be very useful here for further planning.

Some assumptions had to be made ad hoc— you will see signs of them in the plans.

As I understand it, A-G and part of H would be available 'immediately'. The main expedient would be a temporary hookup of the room I equipment somewhere in H. Some of the special furniture, e.g., J-10 and J-11 can probably go pro tem in D or E, and I will use F as a temporary office. Before anything more definite is done about temporary arrangements, however, we should have a clearance for the entire job, and some fair idea of the timing of the completion (and your move). These plans are designed for use of the whole space, and it would be very distressing to be bound to the A-H segment sine die.

Should I go into other specifications? For dust control, asphalt tile is almost obligatory flooring in microbiological work; the walls likewise should have a moderately smooth finish (e.g. smooth plaster, or transite, painted). I am not too fond of ceramic tile, and that's expensive. At a few strategic points, acoustic panelling would be desirable. Matters like fluorescent lighting, what ventilation is needed, etc., I hope I can take for granted.

Plans and furniture

1. Basic furniture unit is a laboratory bench, 28-30" deep and 30" high, with black formica top. A unit working space is 6 linear feet of bench; usually two units are allotted per worker. Each unit should have the following service: gas (2 outlets); 110V AC (4 outlets); 1 bank of drawers; 1 cabinet; 1 built-in luminaire * . Above each unit is open adjustable shelving, starting 18" above table top, and 3' higher.

As far as possible, bench units should be flexibly mounted to allow re-arrangement, change of height, etc. This applies especially to L's.

* luminaire is a circline fluorescent lamp mounted in a metal box about 4" below table top surface. A 4" circular aperture in table top is ledged to hold a glass plate. This is an invaluable unit for examination of cultures on Petri plates by oblique illumination, and has proved very successful in this laboratory. Required in A-D-G-E and one only in F and N.

2. Laboratory bench, standing height. Built-in drawers throughout. No luminaire. Gas as above; electric service 1 outlet per foot. As these are used extensively for pouring plates, it is especially important that they have a level surface.

3. Wall shelves/standing cabinets; open or glass-doored. 12" deep; generally from floor to 8' height. (Lowest 18" might preferably be closed cabinet with plywood sliding door.)

4. Transite (asbestos) topped table for glass-blowing, lyophil prepn., etc. Gas and electricity. (Recess to N. is for gas tanks). Shallow bins hung on wall to hold glass tubing (6" x 6" x 60")

5. Glass-shelved, glass-door cabinet for sterile Petri dishes with medium.

6. Carpenter's bench, with metal and wood vise, hand tools; power hand-drill and saw. 6 electric outlets.

7. Chemical bench, center trough-drain, reagent rack, built on scaffold/ h/c/

8. Clean-up table (shallow s/s sink with sloping surface; h/c/w)

9. Fume hoods-- existing probably ok

10. Heinicke dishwasher. (Needs steam, distilled water, drain) electricity)

11. Glassware racks (these are L-section steel frame with expanded metal shelves some s/s wire mesh. for drying and storing glassware). With this room 20 plates

11 ctd. tray is 5 x 16 1/2 x 20" and holds 5x4 rows of 5 Petri dishes.

12 Two-purpose sink. Rear section is set very low, and holds pipette-washer, water and acid jars. Overhead pulley and tackle is used to transfer pipette racks in and out of acid. (This has been a very successful solution to a usually messy and sometimes dangerous problem). Front section standard sink. (Both s/s). This protects against drippings of acid too.

13. (New design) Built in water bath with circulating water and overflow. (If there is a decent water heater supply in building, a thermostatic mixing valve should be able to furnish water at 45-50° C.) This is used for cooling flasks and bottles (up to 1/2 gallon) of sterilized agar medium preparatory to pouring.

14. Clothes locker or wardrobe.

15. Telephone extensions (If I am to receive calls at all while working at lab. I have to have handset immediately at lab desk)

16 Blackboard and bulletin board

X s/s sink; h/c/w

Y garbage grinder (Disposall) in drain.

s/s stainless steel hew hot and cold water.

If possible, air pressure line (60 psi min., with reducers at some points) should be furnished to rooms C, J and M. A compressor might be installed in room I

Is distilled water line available? It should be furnished to sinks as J and D. If not, a still (5-10 gph, indirect steam heated) could be installed in room I, but preferably somewhere on a higher floor to obviate need for pump.

What is height of windows? Esther recalled them as being high enough not to interfere with placement of benches. Room K may have to be reorganized, however.

Plans: room purpose outline

A G D E Basic labs.

N F Lab-offices (primarily for postdoctoral visitors and associates)

B darkroom (note light lock

C constant temperature rooms: 1: 37° C. 2: 4° C. (note window to J) 3: freezer compartments -20° ; 4 anteroom and about 25° Compressor might be installed in I with remote line to C2-C3

H. Common room, cloakroom, and access to labs. Typewriter table.

I Service room: encloses bodies of autoclaves and ovens to minimize heat dissipation. Needs access only for occasional maintenance. Steam, drain, cw, 220V. power needed here. The doors of the equipment open into J. If still and water-soft for same have to be installed too, a larger room (at expense of N) would be needed.

J Cleanup; medium preparation and chemistry (hoods)

K Sterile (inoculating) room. Primarily for purging stock plates. Should be vented if necessary with well-~~fitting~~ filtered air for dust control.

L Supply and storage (esp. for several thousand stocks) and shop-bench

M Equipment room. (balances, photometers, air-turbine centr.....) Needs electrical outlets 1/ft, but not gas, luminaires

O 'general office'; shelves for reprints and other literature; secretarial work

P Private Office- desks; files; shelves; typewriter

I am taking an inventory of equipment, and will send that as soon as possible. All in all, I hope to give a capital estimate that will run within about 30% of the investment here. I mention this because the sum is beginning to look rather huge. The increment is important if this is to be a plan for the near future as well as for the immediate present. You may be able to use this approach as an argument for your own administration.

Please let me know if anything here sounds unreasonable. I'm not trying to provoke expedient compromises, but if there are less extravagant ways to accomplish the same ends, please let me hear.

Yours sincerely,

Joshua Lederberg

P.S. Do you have easy access to an Edison Voicewriter dictating machine? I hesitate to route too much of this informal correspondence through our own secretaries, and they are badly overworked already. Would it be practical to send you the disks direct?

P.P.S. I did just do an afternoon's work to capitalize my present lab. equipment. I had no trouble in listing about \$25000; I would guess that \$30 000 would just cover it. This is not to say I would want to copy just the existing equipment, but this does furnish the best possible basis. (I did not attempt to list every last item: the extra \$5 000 is not padding, but an honest guess as to the present facilities. There were considerable savings here— a number of items were originally obtained as war surplus, e.g., the autoclave and still.)